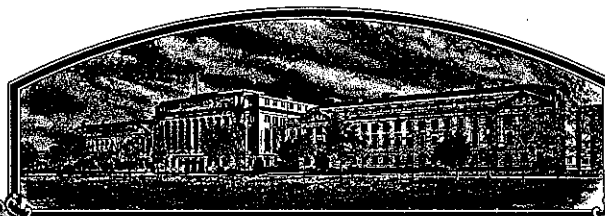


No.

8500023



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME;

King Grain U.S.A., Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S), AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (T. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'KG20'



In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington, D.C.
this 28th day of February in
the year of our Lord one thousand nine
hundred and eighty-six.

Attest:

Kenneth H. Wood
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

W. W. Taylor
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO. 0581-0065

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

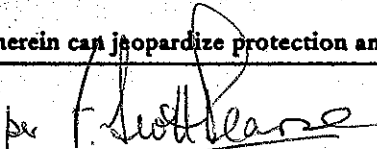
1. NAME OF APPLICANT(S) King Grain U.S.A., Inc.		2. TEMPORARY DESIGNATION KG08009		3. VARIETY NAME KG20	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) 719 Center St., East Aurora, N.Y. 14052, U.S.A.		5. PHONE (Include area code) (716)655-1310		FOR OFFICIAL USE ONLY PVPO NUMBER 8500023	
6. GENUS AND SPECIES NAME Glycine max		7. FAMILY NAME (Botanical) Leguminosae		FILING DATE 12/3/84 TIME 2:30 <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.	
8. KIND NAME Soybeans		9. DATE OF DETERMINATION 1979		FEES RECEIVED AMOUNT FOR FILING \$ 1,800 DATE 12/3/84 AMOUNT FOR CERTIFICATE \$ DATE	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation					
11. IF INCORPORATED, GIVE STATE OF INCORPORATION New York				12. DATE OF INCORPORATION December 10, 1982.	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Bernard M. Leese, Jr., UNDERWOOD ARGIBUSINESS ASSOC., 210 Kimblewick Dr., Silver Spring, MD 20904, U.S.A. Telephone # (301)622-3757 Telex: 296415					
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED					
a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)		c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)			
b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement		d. <input type="checkbox"/> Exhibit D, Additional Description of the Variety <input checked="" type="checkbox"/> EXHIBIT E R/S 8/14/85			
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) <input type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input checked="" type="checkbox"/> No					
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> Foundation <input type="checkbox"/> Registered <input type="checkbox"/> Certified			
18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? <input type="checkbox"/> Yes (If "Yes," give date) <input checked="" type="checkbox"/> No					
19. HAS THE VARIETY BEEN OFFERED FOR SALE OR MARKETING IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No					
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF APPLICANT King Grain U.S.A., Inc. 				DATE October 22, 1984	
SIGNATURE OF APPLICANT				DATE	

EXHIBIT 'A'

Origin and Breeding History of the Variety

- 1) KG20 (KG08009) was developed by King Grain Limited, Chatham, Ontario. This variety originated from a hand-pollinated cross of SA198 x 2S11 (059-903 x Hardome) made in 1977. The F₁, F₂ and F₅ generations were grown in Ontario and the F₃ and F₄ grown in Belize, Central America. Early generations were advanced using a modified single seed descent technique. KG20 was F₅ derived and was yield tested in 1980-82.
- 2) In 1979, single plants of the variety were reselected and grown in a winter nursery in Chile (1979-80). Rows conforming to a standard were harvested and bulked to commence yield testing in 1980. The genetic make-up of the variety was uniform and stable in subsequent generations. Dark buff variants occur at less than 1.5%.
- 3) KG20 has been in yield trials since 1980. See attached.

EXHIBIT 'B'

Novelty Statement

Novelty is based on the unique combination of the following characters:

KG 20 is most similar to 'Maple Amber' except KG20 is two days earlier, 8 cm shorter and .7 gms per 100 seeds heavier than Maple Amber. KG20 oil and protein content is lower than Maple Amber (2% and 0.7% respectively).

Official Ontario Trials

1980-82 Summary

Entry	Maturity (days)	Plant Ht. (cm)	100 Seed Wt. (gm)	Oil (%)	Protein (%)
KG20 (KG08009)	111	75	17.8	17.8	41.6
Maple Amber	113	83	17.1	19.8	42.3

OFFICIAL ONTARIO TRIALS
1980-82 Summary, 2600 H.U.

8500023

Variety / Year	Yield (kg/ha)	Maturity (days)	Plant Ht (cm)	Lodging Rate (1-5)	100 Seed Wt(gm)	Seed Quality (1-5)	Oil (%)	Protein (%)
<u>K08009</u>								
KG20 80	3068	112	82	3.4	20.1	2.5	18.6	40.0
81	3407	108	70	1.9	18.1	2.6	18.0	43.4
82	<u>2588</u>	<u>113</u>	<u>74</u>	<u>1.5</u>	<u>15.3</u>	<u>2.2</u>	<u>16.9</u>	<u>41.4</u>
	3021	111	75	2.3	17.8	2.4	17.8	41.6

Maple Presto

*80	2228	107	79	2.2	17.5	3.5	20.5	40.8
81	2715	97	71	1.2	18.3	3.4	19.9	40.6
82	<u>2143</u>	<u>104</u>	<u>69</u>	<u>1.0</u>	<u>15.7</u>	<u>2.8</u>	<u>19.6</u>	<u>39.1</u>
	2362	103	73	1.5	17.2	3.2	20.0	40.2

Maple Amber

80	3198	116	91	3.2	18.9	2.0	20.7	41.8
81	3476	109	76	1.8	17.3	2.5	-	-
82	<u>2705</u>	<u>114</u>	<u>81</u>	<u>1.4</u>	<u>15.2</u>	<u>1.9</u>	<u>18.8</u>	<u>42.8</u>
	3126	113	83	2.1	17.1	2.1	19.8	42.3

Maple Arrow

80	3250	120	94	3.2	20.2	1.8	20.6	39.8
81	3795	117	79	1.8	19.5	1.6	19.8	43.3
82	<u>2996</u>	<u>121</u>	<u>87</u>	<u>1.9</u>	<u>17.0</u>	<u>1.3</u>	<u>19.4</u>	<u>41.5</u>
	3347	119	87	2.3	18.9	1.6	19.9	41.5

Evans - Official Oil Comparison

80	20.2	39.2
81	19.0	43.0
82	<u>19.0</u>	<u>39.7</u>
	19.4	40.6

Phytophthora
% Plant Loss

K08009

80	9
81	20
82	<u>16</u>
	15

Amsoy 71

80	51
81	31
82	<u>34</u>
	39

* One location only.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) King Grain U.S.A., Inc.	TEMPORARY DESIGNATION K08009	VARIETY NAME KG20
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 719 Center St., East Aurora, N. Y. 14052, U.S.A.		FOR OFFICIAL USE ONLY PVPO NUMBER 8500023

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., 0 9). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

3



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

1

1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other (Specify)

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1

1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ 4. SEED SIZE: (Mature Seed)

1 8

Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

7 R/S

1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other (Specify) LIGHT BUFF

★ 6. COTYLEDON COLOR: (Mature Seed)

1

1 = Yellow 2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

2 R/S 3/26/85

1 = Low 2 = High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

1

1 = Type A (SP1^a) 2 = Type B (SP1^b)

★ 9. HYPOCOTYL COLOR:

4

1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ 10. LEAFLET SHAPE:

3

1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other (Specify)

11. LEAFLET SIZE:

☒ 11 = Small ('Amsoy 71'; 'A5312')
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

12. LEAF COLOR:

☒ 21 = Light Green ('Weber'; 'York')
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

★ 13. FLOWER COLOR:

☒ 2

1 = White

2 = Purple

3 = White with purple throat

★ 14. POD COLOR:

☒ 2

1 = Tan

2 = Brown

3 = Black

★ 15. PLANT PUBESCENCE COLOR:

☒ 2

1 = Gray

2 = Brown (Tawny)

16. PLANT TYPES:

☒ 11 = Slender ('Essex'; 'Amsoy 71')
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

★ 17. PLANT HABIT:

☒ 3

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ 18. MATURITY GROUP:

☒ 0 ☒ 2

1 = 000

2 = 00

3 = 0

4 = I

5 = II

6 = III

7 = IV

8 = V

9 = VI

10 = VII

11 = VIII

12 = IX

13 = X

★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★ ☒ 1Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)★ ☒ 1Bacterial Blight (*Pseudomonas glycinea*)★ ☒ 1Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

★ ☒ 1Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojina*)★ ☒ 1

Race 1

☒ 1

Race 2

☒ 1

Race 3

☒ 1

Race 4

☒ 1

Race 5

☐

Other (Specify)

☐ Target Spot (*Corynespora cassicola*)☐ Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☐ Powdery Mildew (*Microsphaera diffusa*)★ ☒ 1Brown Stem Rot (*Cephalosporium gregatum*)☐Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

- ★ ☒ 1 Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)
- ☒ 2 Purple Seed Stain (*Cercospora kikuchii*)
- ☒ 1 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☒ 1 Race 1 ☒ 1 Race 2 ☒ 1 Race 3 ☒ 1 Race 4 ☒ 1 Race 5 ☐ Race 6 ☒ 1 Race 7
- ☒ 1 Race 8 ☒ 1 Race 9 ☐ Other (Specify) _____

VIRAL DISEASES:

- ☐ Bud Blight (Tobacco Ringspot Virus)
- ☐ Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☒ 1 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ Pod Mottle (Bean Pod Mottle Virus)
- ★ ☒ 1 Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☒ 1 Race 1 ☒ 1 Race 2 ☒ 1 Race 3 ☒ 1 Race 4 ☐ Other (Specify) _____
- ☐ Lance Nematode (*Hoplolaimus Colombus*)
- ★ ☒ 1 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☒ 1 Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☐ Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ OTHER DISEASE NOT ON FORM (Specify): _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☒ 1 Iron Chlorosis on Calcareous Soil
- ☐ Other (Specify) _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ Potato Leaf Hopper (*Empoasca fabae*)
- ☐ Other (Specify) _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Maple Amber	Seed Coat Luster	Maple Amber
Leaf Shape	"	Seed Size	"
Leaf Color	"	Seed Shape	"
Leaf Size	"	Seedling Pigmentation	"

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/POD
				CM Width	CM Length	% Protein	% Oil		
Submitted	111	2.3	75	6.0	10.0	41.6	17.8	17.8	2.6
Maple Amber Name of Similar Variety	113	2.1	83	6.5	11.0	42.3	19.8	17.1	2.7

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTi-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

EXHIBIT E

STATEMENT OF THE BASIS OF THE APPLICANT'S OWNERSHIP

SOYBEAN: 'KG 20'

PV No. 8500023.

KING GRAIN, U.S.A., INC.

July 1, 1985

The variety for which Plant Variety Protection is sought was developed by Dr. N.R. Bradner an employee of King Grain. By agreement between the stated parties, all rights to the soybean variety 'KG20' were assigned to King Grain and no rights to 'KG20' are retained by the employee.

